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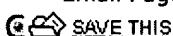
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learning curve

Technology Made Simple

What is Middleware?

By Derek Slater
April 4, 2001 — What is middleware?

Essentially, middleware is software that connects applications, allowing them to exchange data. It offers several key advantages over hardwiring applications together, which typically entails adding code to all of the applications involved, instructing them on the particulars of talking to each other. Middleware adds an independent third party to that transaction, a translator.

Why use it?

From a business standpoint, connectivity among applications is a given today. Shop floor, inventory, accounts receivable and advanced planning applications need to communicate so that companies can make accurate promises to customers, and executives can make educated decisions more quickly.

E-business in particular demands better integration by an order of magnitude. That's because Web customers commonly want to see several bits of up-to-the-minute information at the same time—product specifications, availability, shipping times and account status. "Call centers have reps logged on to multiple applications [to answer those kinds of questions]. That's OK when you're paying them to do it, but when you start to let customers access that information themselves, it's too complicated," says Karen Boucher, executive vice president of The Standish Group in West Yarmouth, Mass.

Enter middleware to tie together all those apps and connect them to a Web front end, hiding the complexity from the customer.

Why is it confusing?

Three reasons. One, the whole technology space is fraught with incomprehensible jargon because there is a

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lot of legitimate technical detail. (This article doesn't aspire to cover everything, just the fundamentals.) Two, the vendors regularly change their terminology and product names. Three, the products grow in functionality, which makes it harder to delineate categories.

What are the benefits of middleware?

From a technical standpoint, middleware offers several benefits, depending on the type you choose:

Simplicity: In today's corporate computing environments, many applications have to share data. Putting middleware in the middle can mean each application needs only one interface—to the middleware—instead of a separate interface to each application it needs to talk to. (However, if you're connecting just two applications to one another, it might actually be more complicated to introduce middleware than simply coding the two apps to talk to each other.)

Persistence: Middleware can capture data and hold on to it until it has been recorded appropriately by all the applications or databases that need the information. In technical vernacular, this ability is referred to as "persistence."

Services: If your data needs to be checked for integrity, printed out, reconciled with data from other applications, merged, split or reformatted, various kinds of middleware can handle those tasks efficiently. This means you don't have to rewrite those services again and again for each application that uses them. As middleware products evolve, the breadth of services they can provide grows. Incidentally, vendors that sell such robust products often try to disassociate themselves with the term middleware.

Are there different kinds of middleware?

It isn't uncommon for companies to have several types of middleware at work in a single enterprise, with different kinds proving more appropriate for different integration chores. Bigger companies, which usually have more complex integration requirements, tend to gravitate toward more sophisticated middleware products such as EAI.

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Buzz Words

Application Software

Software applications that are intended for end-users, such as database programs, word processors, and spreadsheets. Application software runs on top of system software.

Architecture

The overall design of a system of hardware or software, which includes definitions ranging from precise mechanisms to broad outlines.